

Software Testing



Software Testing Questions



- **Who** performs testing?
 - Developers? End users? Third party groups?
- **What** are you testing?
 - Refine: What attributes are you testing?
 - Examples: Correctness? Efficiency? Flexibility?



Software Testing Questions



- **When** do you perform testing?
 - Throughout development cycle? At end?
- **Where** do you perform testing?
 - Refine: What level are you testing?
 - Examples: Individual components? Entire system?



Software Testing Questions



- **Why** are you performing testing?
 - Refine: What are the objectives?
 - Examples: Validation? Verification?
- **How** do you perform testing?
 - Methodology? Automated? Toolkit?



Who performs testing?

- Developers
 - Allows immediate fixes
 - Lowest cost?
 - Too close to code?
- End Users
 - Realistic usage
 - Limited to functionality
- Third Party Groups
 - No bias
 - Can examine code
 - Can test functionality
 - Less familiar with code
 - Expensive



What attributes are you testing?

- Operation
 - Correctness
 - Reliability
 - Efficiency
 - Integrity
 - Usability
 - Security
- Revision
 - Maintainability
 - Testability
 - Flexibility
- Transition
 - Portability
 - Reusability
 - Interoperability



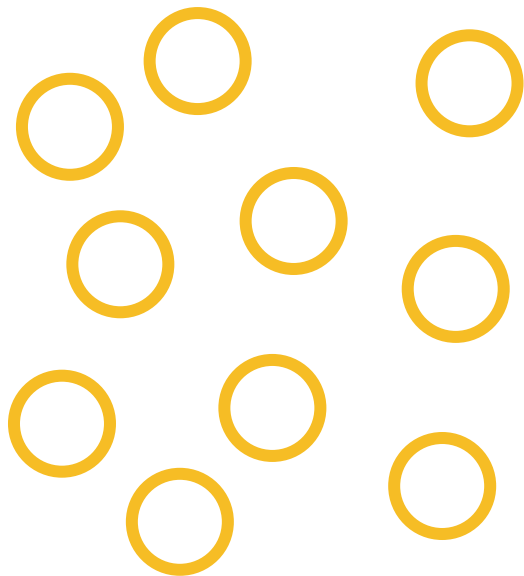
When do you perform testing?

- Before code development
 - Create tests before code, incrementally develop to pass tests
- Throughout the development cycle
 - Continuous, test after each phase
- End of development cycle
 - After all functionality developed, before reaching customer

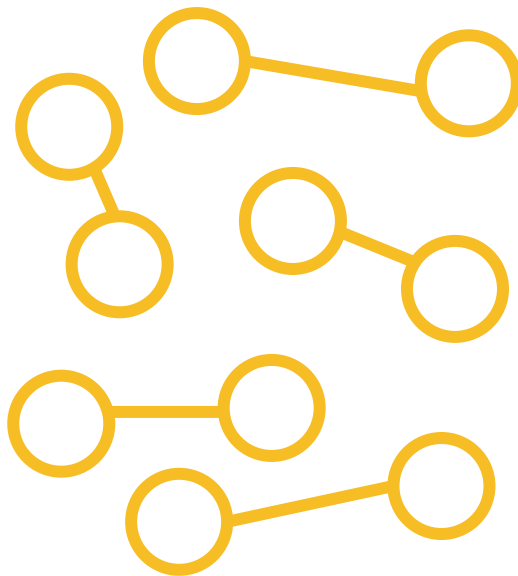


What level are you testing?

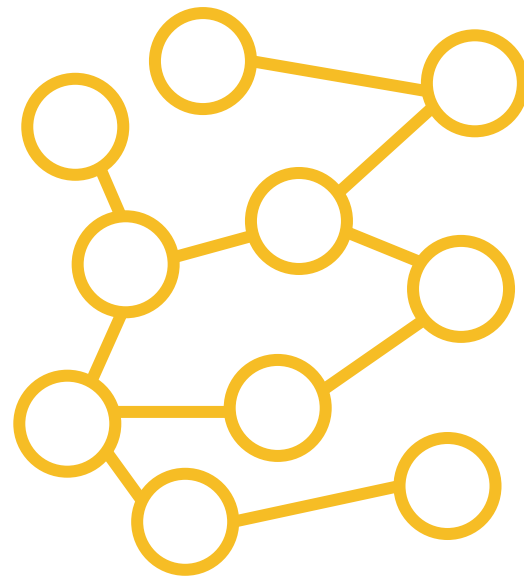
Unit Testing



Integration Testing



System Testing



Why are you testing?

- Verification
 - Have we built the system right?
- Validation
 - Have we built the right system?
- Attributes
 - Prioritize specific quality attributes



How do you perform testing?

- Who (i.e. developers, users, third party) is doing the testing?
- What quality attributes are you testing?
- When (in development cycle) are you testing?
- Where/what level (i.e. unit, integration, system) are you testing?
- Why are you testing (i.e. verification or validation)?
- Which testing approach will you take?





CHANGE THE WORLD FROM HERE